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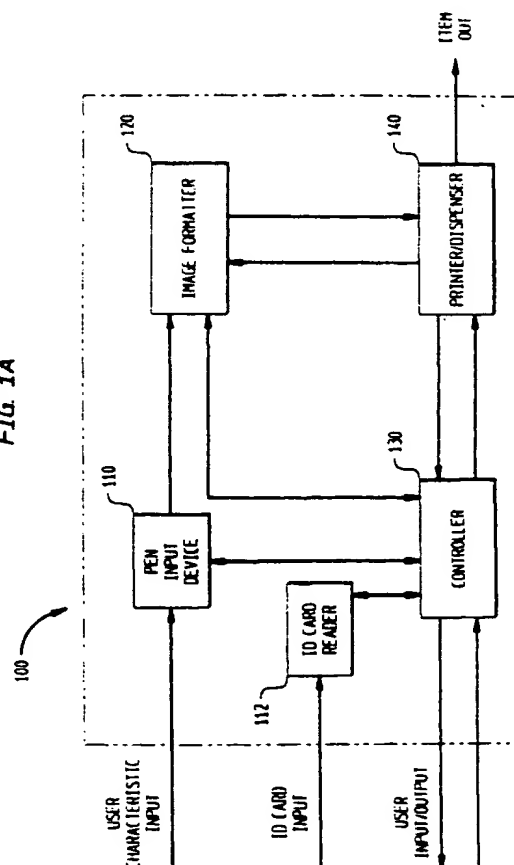
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## (54) Capture and use of a personal identification feature at a service terminal

(57) A service terminal is provided for dispensing items with an indicium associating the item to a user accessing the service terminal. The indicium may be captured at the terminal and may include the user's signature, an electronic image of the user, or both. The indicium may be first verified with a stored electronic version of the indicium before being provided to the item for identification. Upon verification, the item with the indicium is dispensed to the authorized, verified user. The item may be a traveler's check or a negotiable instrument.

FIG. 1A



## Description

### TECHNICAL FIELD

This disclosure relates to pattern recognition, and more particularly relates to automatically providing personal identifying indicia to items dispensed from service terminals.

### BACKGROUND

The use of automatic signature verification to identify an individual and to verify the individual's authority to complete an automated transaction at a service terminal, for example, a self-service terminal, gain control of a computer, or gain entry to a secured area, is known in the art. For example, each of U.S. Patent No. 5,257,320, issued October 26, 1993; U.S. Patent No. 5,251,265, issued October 5, 1993; U.S. Patent No. 5,111,512, issued May 5, 1992; U.S. Patent No. 5,109,426, issued April 28, 1992; and U.S. Patent No. 5,202,930, issued April 13, 1993, relate to signature capture and/or automatic verification of a captured signature.

Typically, signature verification includes the use of a pen input device to capture an electronic version of a user's signature at an apparatus incorporating the input device when the user requests access. The captured version of the user's signature is used to verify the user's identity by comparing it to a stored version of the user's signature on file. Verification is used, for example, to complete a questionable user transaction. Because of current trends towards automated services, there is a need for cost effective and time efficient methods of signature capture and to provide some form of security indicia to personally identify, and preferably to verify, the integrity of items, such as documents or goods, dispensed to a user from automated service terminals.

### SUMMARY OF THE DISCLOSURE

The present disclosure provides a service terminal with the ability to capture a user's identity in some form and to attach a security mark derived from the captured identity to an item to be dispensed to the user from the terminal. The service terminal may include electronic means for verifying the user's identity after capture by comparing the captured identity to a stored electronic version of the user's identity, or by any other method of authorized user identification. Multiple personalized items may be issued from the terminal with substantially similar indicia, for example, sequentially numbered and secured negotiable financial instruments.

In one example, a method is disclosed to provide security to a document for automatic dispensing that includes first capturing a characteristic representative of an authorized receiver of the item. The characteristic is then digitized within digitizing means and then proc-

essed to provide some form of identifying mark or indicium to the document, based on the captured characteristic, before the document is dispensed to the receiver. The digitized characteristic may be verified before the document is dispensed to determine the authenticity of the receiver's authority to receive the document. The document may be any kind of document; for example, a negotiable instrument such as a traveler's check. The person who receives the items from the service terminal need not be the person whose identity is marked thereon; for example, a secretary may be authorized to receive the traveler's checks of his/her employer, but only the employer is authorized to cash them.

The step of capturing the characteristic may include capturing a signature or a form of photographic or electronic image of the authorized receiver or guarantor of the document, for example, using a signature input device or electronic camera, respectively. The term "electronic" for imaging systems described herein is defined to include video imaging. The captured characteristic may be stored in a memory at the accessed terminal or at a distinct, centralized or remote location. The memory or database may be accessed by one or multiple users. The providing of forms of identifying indicia preferably includes scaling the characteristic to at least approximately fit into a particular space allocated for the indicia on the item to be dispensed.

Another example provides a self-service terminal for dispensing documents identified with a security indicium derived from the capture of some physical identifying feature of the terminal's current user. The identifying feature is not limited to that feature captured during contemporaneous use, but may be a predetermined or predefined indicium. The terminal includes a device for generating an image in response to the user's input, and means for providing the security indicium derived from the generated image in some form on the document to identify the document with the user. Preferably, the terminal includes means for digitizing the identifying feature and means for verifying that the user providing the identifying feature is authorized to receive the document to be dispensed.

The image generating device may include a signature input device, such as a tablet, with the captured identifying feature being the user's signature. The providing means affixes or prints the user's signature to the document. The image generating device may also include an electronic camera or other means for capturing an electronic or photographic image of a portion of the user's person. The providing means includes means for printing or affixing the security indicia derived from the electronic image, the captured signature, or both, to the document in a form that is either visible or invisible to the human eye.

### BRIEF DESCRIPTION OF THE DRAWINGS

The features of the disclosed personal identification

dily apparent  
to the follow-  
embodiment of  
with the ac-

ity indicium. Alternatively, by appropriate user access,  
a predetermined indicium stored or otherwise accessed  
by the terminal may be provided to the item for dispens-

of an example  
with this inven-

of a variation

of another ex-  
mple with this

of a variation

the terminal in

of a variation

drawings, with  
or identical  
FIG. 1A-3B, a  
user's iden-  
tification from the  
marked. The  
marked eye, but  
either directly  
may be derived  
from a portion  
of the image. In a  
first embodiment, the  
terminal is a self-  
service terminal",  
such that pro-  
cessing a commuter  
machine from  
input for human

rein, may be  
electronic, opti-  
cal, wherein, refers  
to an instru-  
ment, goods, etc.  
terminal, such as  
a terminal. For ex-  
ample, the se-  
curity of the user's  
identification is  
limited to a  
portion of the  
terminal. The  
terminal, such as  
the user's secu-

- 5 Numerous methods may be used to verify the iden-  
tity and/or authority of a user of a service terminal before  
the terminal dispenses a requested item. For example,  
personal identification card and keypad-entered per-  
sonal identification numbers may be used. In addition to  
10 its use to identify an item to be dispensed, the service  
terminal may capture a user identification in some form  
and use it to verify that the user is authorized to receive  
the item to be dispensed. Preferably, a prior version of  
a captured user identification indicium may be stored in  
15 a memory such as a database and utilized during a con-  
temporaneous transaction to identify the user. The  
memory may be local, that is, located within the terminal  
in current use, or may be remotely stored in a memory  
such as a database at a centralized or remote location.  
20 Stored therein may be information derived from but not  
necessarily identical to the previously captured user  
identification. The derived information may be in any  
form suitable for use in user recognition; for example,  
neural network parameters may be stored for corre-  
25 sponding neural network recognition. In addition, an  
electronically digitized signature contemporaneously  
captured at a terminal in use may be compared with a  
previously captured signature version which is on file in  
a memory located at the terminal or elsewhere. Also, a  
30 stored photographic facsimile of the user may be com-  
pared with a contemporaneously captured image of the  
user. Such memory-stored characteristics, however,  
may not be sufficient to reconstruct the exact captured  
indiciu. While means for controlling the example ser-  
35 vice terminal are typically resident within the terminal,  
control may also be implemented from a point outside  
the terminal.

FIG. 1A shows a first embodiment of a service ter-  
40 minal 100. Service terminal 100 is a self-service ter-  
minal; that is, requiring no attendant input, that captures  
and uses a personal identification feature provided by  
the terminal's current user to generate a security or iden-  
tifying indicium associated with the personal identifica-  
45 tion feature for affixation to an item to be dispensed from  
the terminal. The following disclosure refers to the item  
to be dispensed from the terminal, for example, as a  
document such as traveler's check. The service terminal  
affixes security indicia to any item or items dispensable  
50 from a service terminal, either self-service or attended.  
The indicium may be visible or invisible to the handler  
of the document. For example, the security indicium  
may include an invisible bar code or magnetic code  
which is readable by a point-of-sale terminal.

Terminal 100 includes a signature input device,  
55 such as a pen input device 110, operatively connected  
to an image formatter 120 and a controller 130. The sig-  
nature input device captures the user's signature and  
provides the input in electronic form, in accordance with

Depending on predetermined rules,  
people whose indicia are represented  
as well as other people, may partici-  
pate in the transaction.

used personal identification system  
has been particularly shown and de-  
scribed in connection with the preferred embodiments, it  
will be apparent to those skilled in the art that various  
modifications and details may be made therein  
without departing from the scope and spirit of the inven-  
tion. Such modifications and details are to be considered  
as being within the scope of the invention.

marking an item processed by a service  
terminal, the steps of:

generating an identifying characteristic of a  
security mark on the item; and  
displaying the security mark on the item before  
the item is released to the user, in response to  
the identifying characteristic.

claim 1, wherein the step of captur-  
ing a user's identity card.

claim 1, wherein the step of captur-  
ing a user's identity card via a  
display terminal.

claim 1, wherein the step of captur-  
ing a user's identity card.

claim 4, further including the step of  
displaying the identifying characteristic.

claim 1, further including the step of  
the user is authorized to receive the  
security mark affixed.

claim 6, wherein the step of verifying  
response to the captured identifying

claim 1, wherein the step of captur-  
ing a signature of an authorized

claim 1, wherein the step of captur-  
ing an electronic image of an au-

claim 1, further including the step of  
dispensing the item, wherein the item  
is a security instrument.

providing a field mark.

mark to an item to be dispensed to a user from the terminal, comprising:

5 a) an identification input device for capturing a representation of a characteristic of the user;

10 b) digitizing means for digitizing the representation;

15 c) verification means for verifying that the user is an authorized user based on previously acquired characteristics associated with the user; and

20 d) formatting means for formatting the verified representation for deposition upon the item.

23. The self-service terminal of claim 22, further including means for affixing the representation upon the item.

24. The self-service terminal of claim 22, wherein the item is a document to be dispensed to the user.

25. The self-service terminal of claim 22, wherein the verification means is operatively connected to a memory storage device for storing the previously acquired characteristics.

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1, provided that a camera 115, such as a , is used within terminal 170 in lieu of signature device 110 for capturing and inputting the signature. Camera 115 is operatively connected to and image formatter 120. When a user signature is input and formatted within the image formatter 120, the formatted security image is directed to printer 140. The formatted security image is printed at a specified portion of the item dispensed to the user. The captured user signature is stored electronically within a memory, such as a database allocated for electronic, photographic storage for later use by the terminal. The self-service terminal 180 of FIG. 2B includes each of the features of self-service terminal 170 of FIG. 2A, and includes means for accessing a centralized storage 161 by the terminal. Centralized storage 161 is electronic storage means remotely located and operatively connected to terminal 180. Centralized storage 161 is capable of storing an image to, or receiving an image from, a controller 130. The image provided to storage 161 may be used to generate a security image, such as a user's photographic facsimile to identify the user, to be dispensed with the user. The controller of terminals 170, 180 may include means for verifying that the user is authorized to complete the requested transaction. The verification means may include comparing an image previously stored in memory or a memory at a remote location with a previously captured photographic identification of the user.

FIG. 3A depicts another embodiment of a service terminal as a self-service terminal that includes a signature device 110, a controller 130 and a printer/dispenser 140, as in the previously described embodiment. FIG. 3A also includes both a signature input device 110. User signature is provided by the user to the signature input device 110 and an electronic or photographic image is provided by the user to the camera 115. The electronic image and electronic signature are converted to a digital format when provided to controller 130. Image formatter 120 processes the digitized user image and digitized user signature to generate security identifiers for affixation to or printing of a document to be dispensed. Depending on the operation of terminal 190, a signature, an image of a user, or both, may be provided to the user to be dispensed. The user's indicia are provided as a document for use as a security mark, such as a picture ID, such as a license, passport, etc. The user's identification is verified, as discussed above, by comparing the previously captured electronic signature, image, or both, to electronically stored verification data.

FIG. 1A

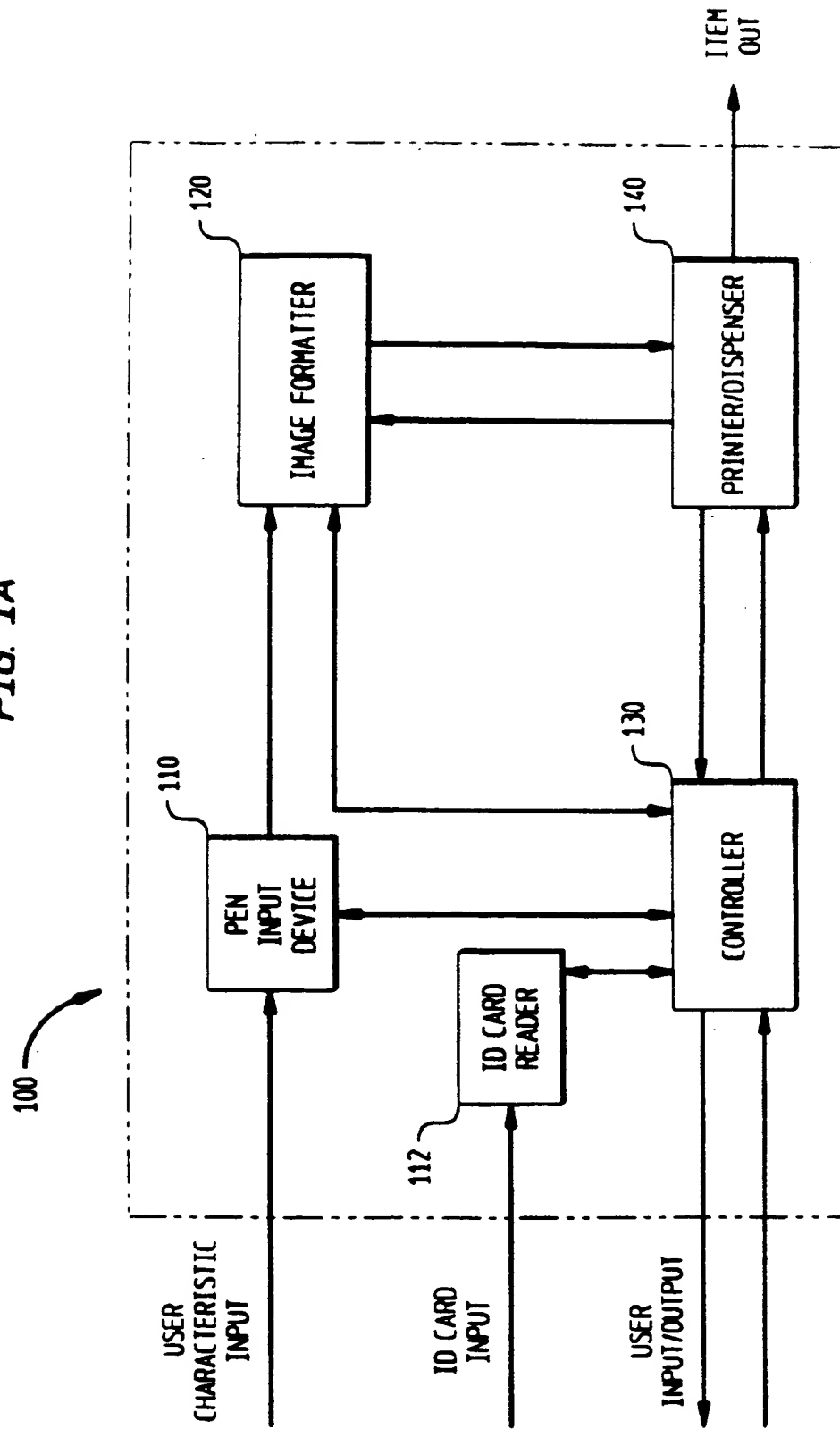


FIG. 1B

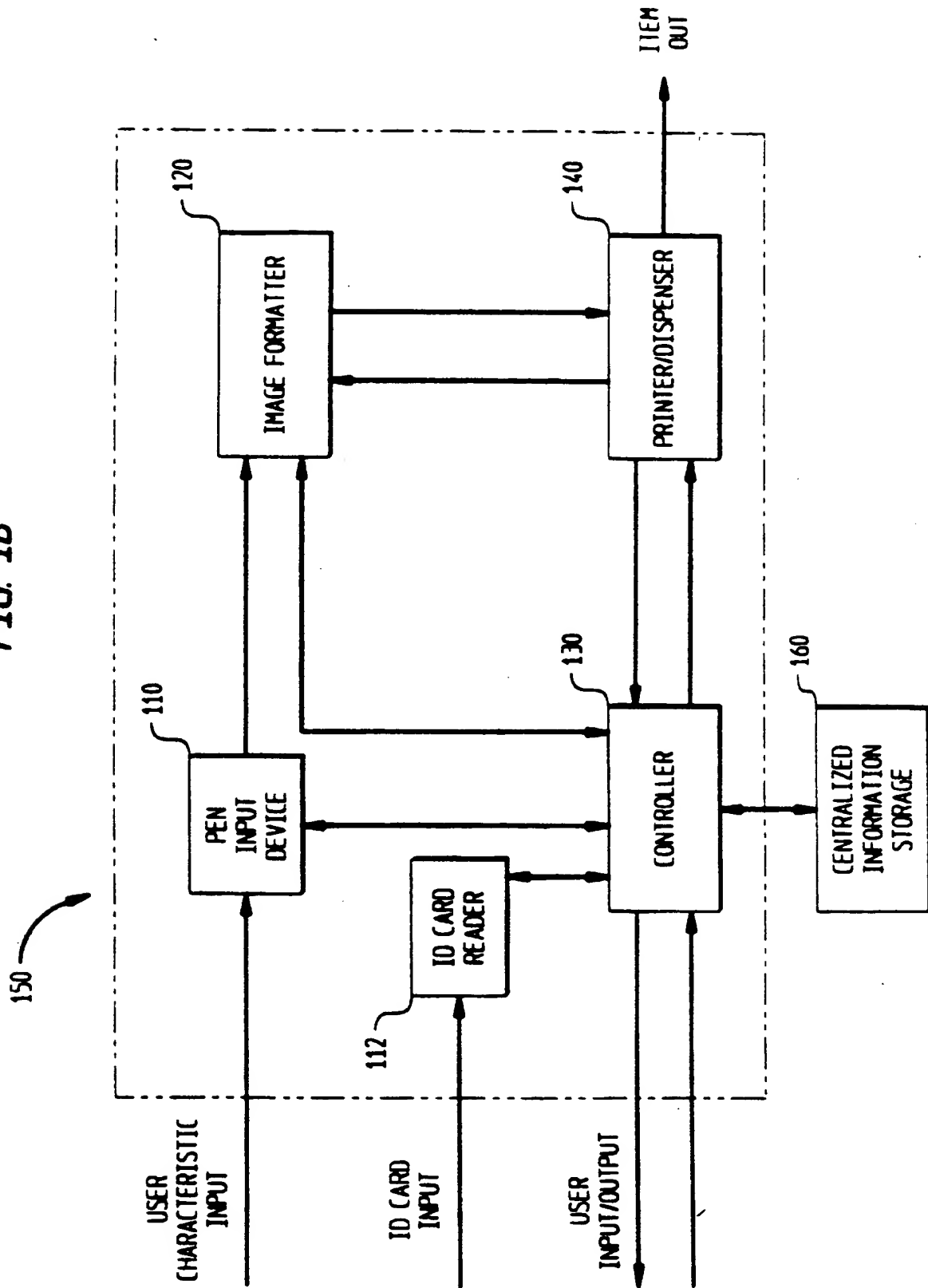


FIG. 2A

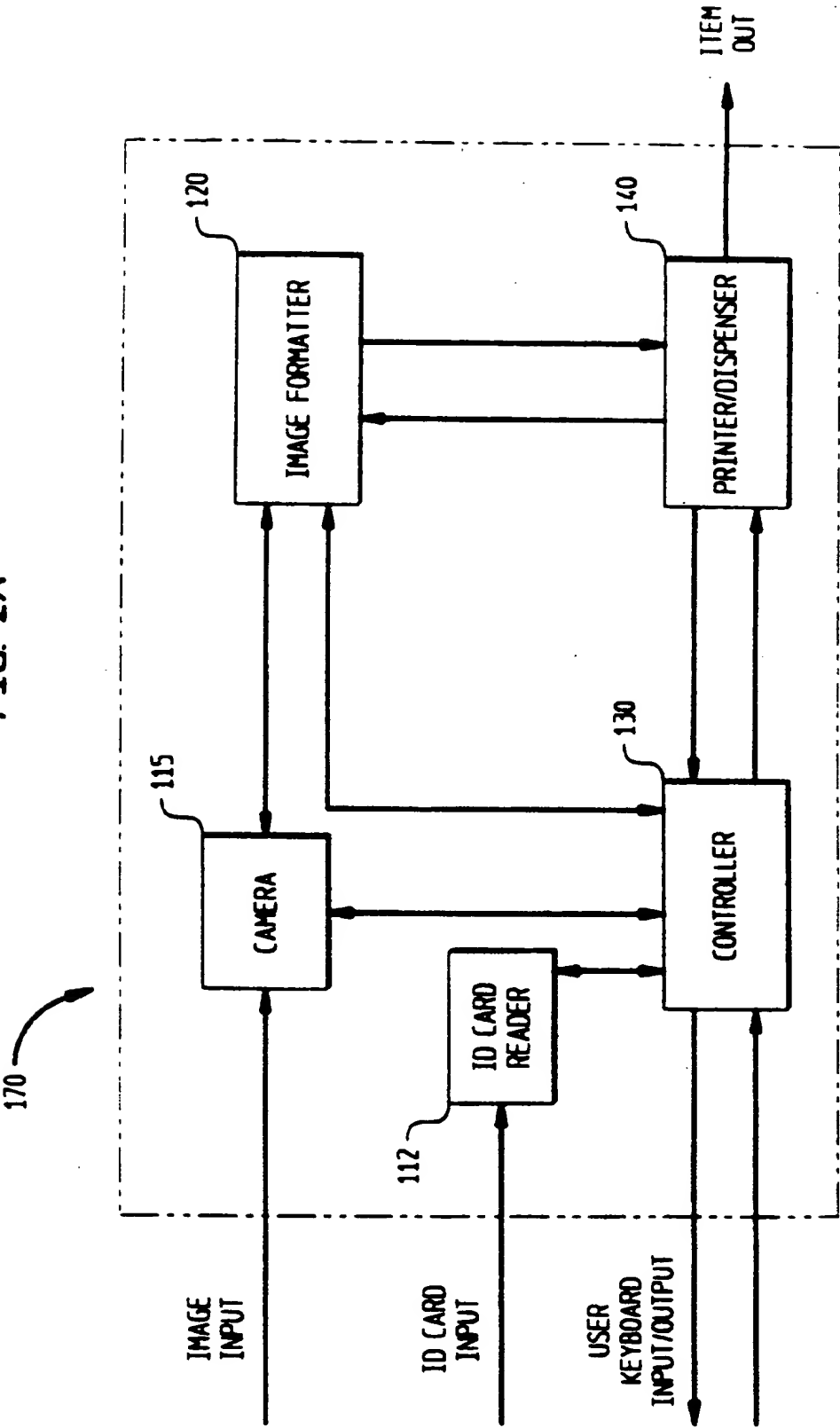


FIG. 2B

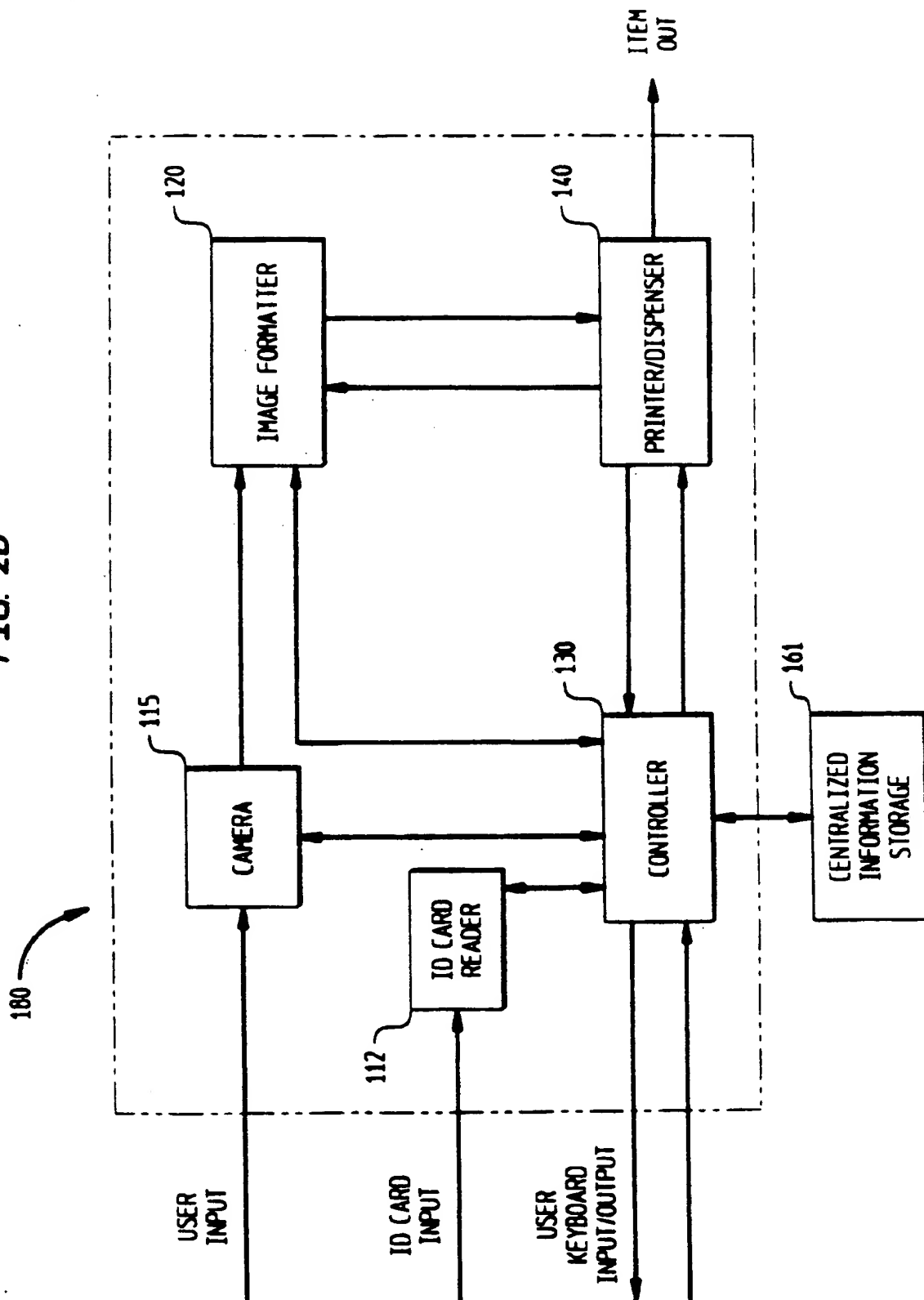




FIG. 3A

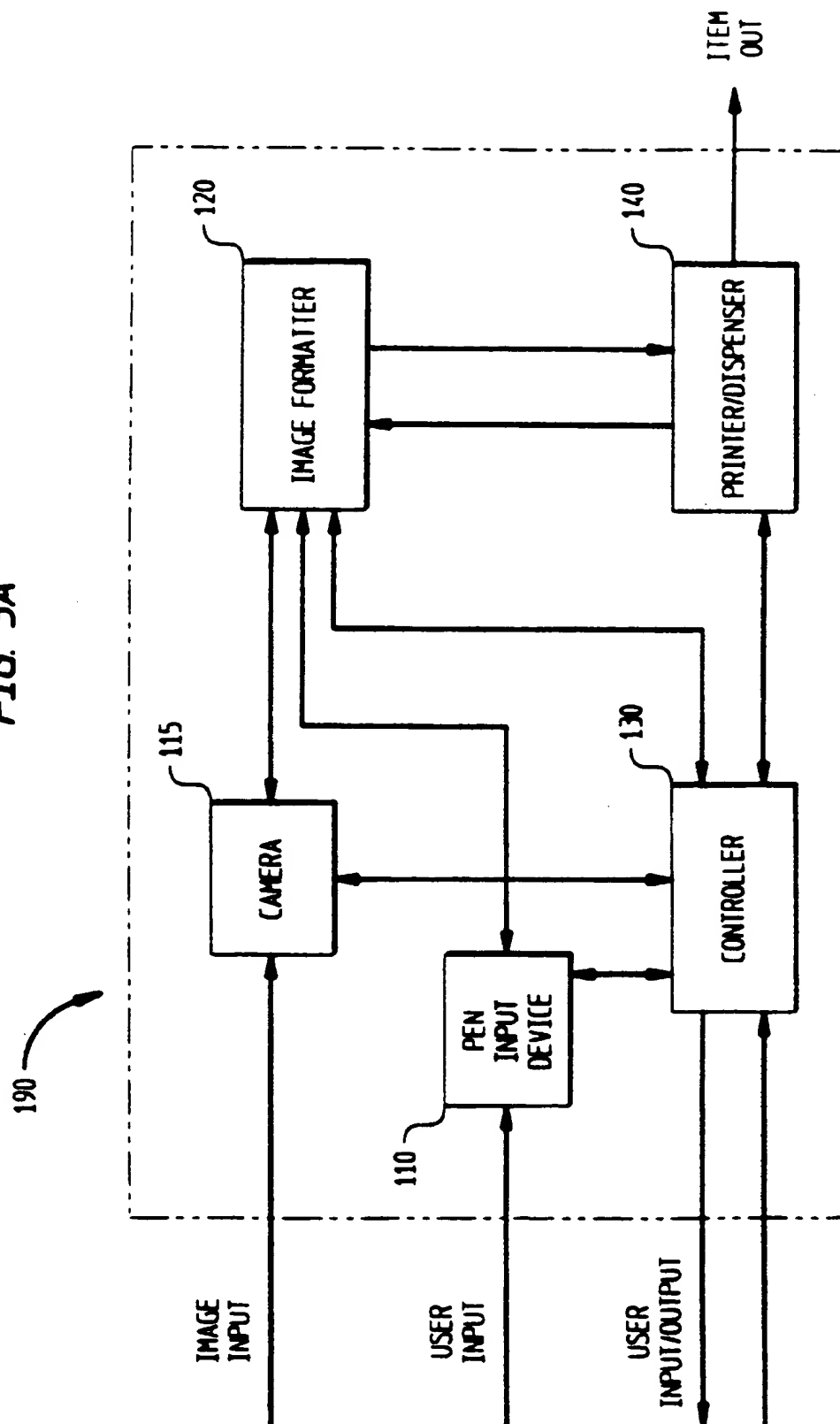
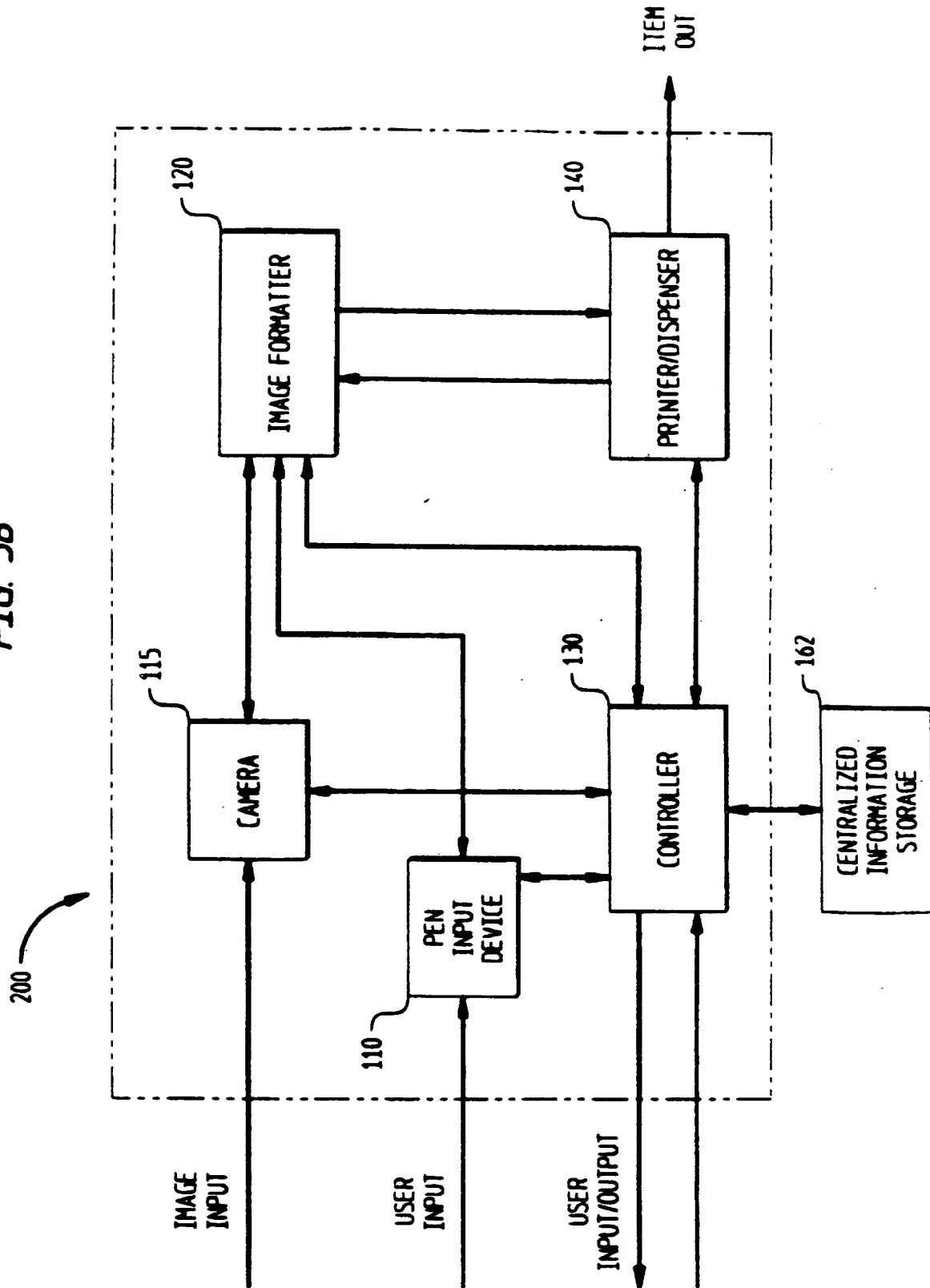
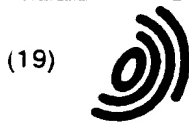


FIG. 3B





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(30) Priority: **25.05.1995 US 450592**

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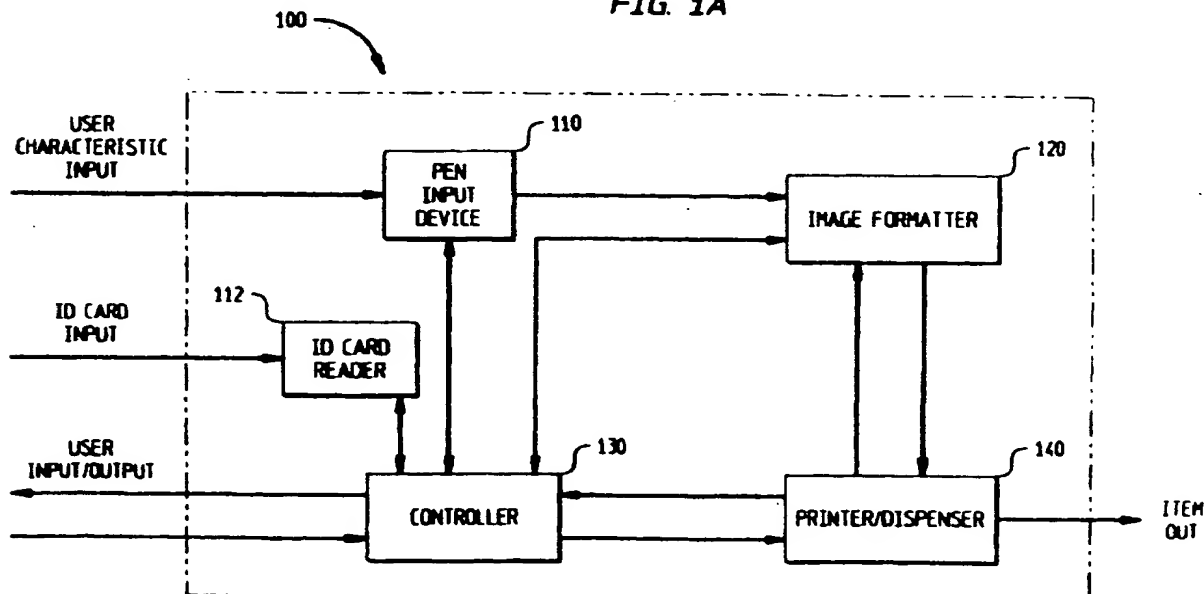
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(54) **Capture and use of a personal identification feature at a service terminal**

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cium may be first verified with a stored electronic version of the indicium before being provided to the item for identification. Upon verification, the item with the indicium is dispensed to the authorized, verified user. The item may be a traveler's check or a negotiable instrument.

**FIG. 1A**





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# EUROPEAN SEARCH REPORT

Application Number  
EP 96 30 3420

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
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The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>21 January 1999</b>	Examiner <b>Buron, E</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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# EUROPEAN SEARCH REPORT

Application Number  
EP 96 30 3420

DOCUMENTS CONSIDERED TO BE RELEVANT			
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Y	PATENT ABSTRACTS OF JAPAN vol. 005, no. 069 (P-060), 9 May 1981 & JP 56 017465 A (NEC CORP), 19 February 1981 * abstract *	25	
A	EP 0 171 380 A (CABLE PRINT NV) 12 February 1986  * abstract; figures 1,3 * * page 7, line 15 - page 8, line 27 * * page 10, line 19 - page 11, line 31 *	1-3,6-8, 10, 12-15, 17, 20-22,24	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>21 January 1999</b>	Examiner <b>Buron, E</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 (01.92) (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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